

# Ørsted in the UK

A man in a yellow hard hat and orange safety vest is adjusting his gear in a locker room. He is wearing a yellow hard hat with a headlamp and is adjusting it with both hands. He is also wearing an orange safety vest with reflective stripes and a black harness. The background shows rows of red lockers and a yellow floor.

Ørsted

# Let's create a world that runs entirely on green energy



## A company with purpose and vision

At Ørsted, we believe in a world that runs entirely on green energy. Climate change is one of the biggest challenges for life on Earth. Today, the world mainly runs on fossil fuels. We need to transform the way we power the world: from black to green energy.

Headquartered in Denmark, and with over 900 employees in the UK, we create market leading green energy solutions that benefit the planet and our customers alike. We develop, construct and operate offshore wind farms, bioenergy plants and innovative waste-to-energy solutions and provide smart energy products to our customers.

Over the last decade we have undergone a truly green transformation. We have divested our oil and gas production business and, by 2023, we will have replaced coal with sustainable biomass in our power stations across Northern Europe, reducing our carbon emissions by 96%.

We are taking real action to make our vision a reality.

**#takegreenaction**

# Ørsted in the UK

## Offshore wind power: the UK leading the way

Ørsted is the global leader in offshore wind power and the UK is a vital market for us. Not only does the UK lead the world in offshore wind, with 36% of the world's installed capacity<sup>1</sup>, but it is also our largest market. With nine operational offshore wind farms and another four in construction, we are a substantial investor in the UK. We are committed for the long-term, both to leading the change to green energy, and to investing in the communities where we work.

Today our nine UK offshore wind farms produce just under 2.5GW, enough electricity to power over

**2 million homes**.

By 2020 our pipeline of projects will see us provide enough power for over

**4.4 million homes**<sup>2</sup>.

### Battery technology integrated into Burbo Bank offshore wind farm

In 2018, we are bringing online a 2MW battery device, integrated into our Burbo Bank offshore wind farm. This will help keep the UK's electricity grid frequency stable and will help balance the intermittent nature of renewable energy. It will be the first time an offshore wind farm is integrated with a battery system to deliver frequency response to the grid.



### Driving down the cost of offshore wind

In 2017, the UK Government awarded us a contract to build Hornsea Project Two, the world's largest wind farm, at a price of £57.50 per MWh. This represents a 50% drop in price from the contracts awarded two years earlier. The optimum scale of the wind farm, added to Ørsted's many years of experience and the industry's maturing technology, made this landmark price possible. We are also able to maximise our efficiency by operating multiple wind farms from our East Coast Hub in Grimsby.

### The world's largest and most efficient turbines




In 2017, we led the industry in deploying, for the first time commercially offshore, the MHI Vestas V164 8.0MW turbines at Burbo Bank Extension. At 195m, these are the largest and most efficient in the world. These ground-breaking turbines will also make up more than half of Walney Extension offshore wind farm, currently under construction.

### Bringing benefits to the UK

As we build and bring online our offshore wind farms, we bring tangible benefits to the UK, in addition to green energy infrastructure. We are not only creating hundreds of jobs during the construction phase, but also offering long-term, skilled work in towns and cities such as Barrow, Grimsby and Liverpool, where we base our operations. We also plan to grow our recently launched apprenticeship scheme.

Thanks to our pipeline of orders, major construction components such as turbine blades, transition pieces and towers can now be manufactured in the UK, helping to create and safeguard skilled jobs in the supply chain. 2017 saw the first blades from the Siemens Gamesa blade factory at Green Port Hull head to our Race Bank offshore wind farm.

We are also working to help UK suppliers become part of our supply chain and benefit from the growth of the industry.

-  Wind power under construction
-  Wind power in operation
-  Battery technology integrated into Burbo Bank offshore wind farm

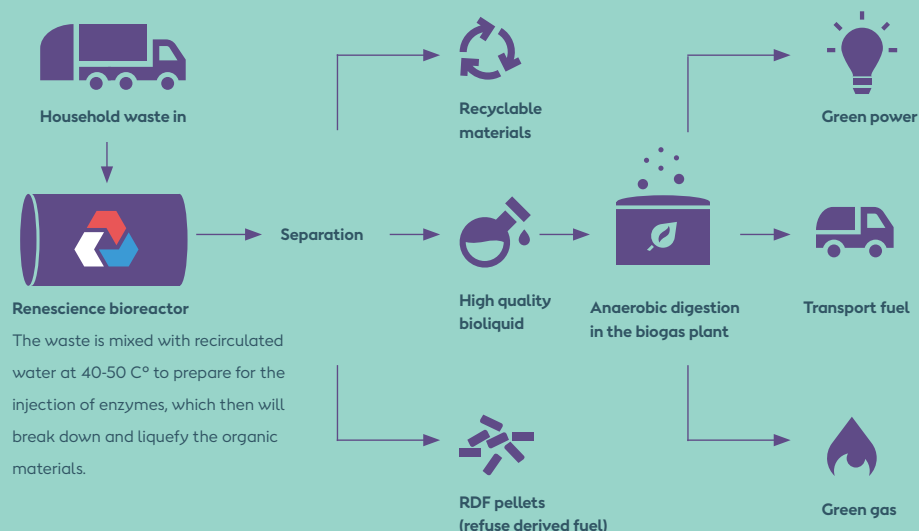
<sup>1</sup> UK's percentage of global offshore wind capacity (GWEC, 2016) Source: <http://gwec.net/global-figures/global-offshore/>

<sup>2</sup> These figures are based on a load factor of 42% and a household consumption of 4.1MWh per year (DECC, 2015).

## Renescience: the circular economy in action

At Ørsted, we have developed Renescience, a patented biotechnology that not only uses enzymes to treat residual household waste but also produces green energy. With no incineration, the Renescience process achieves 100% diversion from landfill, helping to reduce greenhouse gas emissions. It produces high quality recyclables, which are separated, cleaned and sent back into the recycling system. Also, by putting the liquefied organic matter through a process of anaerobic digestion, it creates biogas for the production of green energy or for conversion into transport fuel.

### How does the Renescience technology work?



### Renescience Northwich

In 2017 we constructed our first Renescience plant in Northwich, Cheshire. With this project, we continue our investment in the North of England, creating up to 24 full-time jobs in the area.

Annually, the plant can produce 5 MW of renewable energy, which is enough power for 9,500 homes. It is capable of treating 120,000 tonnes of waste a year, the equivalent of the annual waste from 110,000 UK homes. The digestate, one of the products of the Renescience process, is used for soil restoration on former open-pit mine sites.



## B2B energy supply: helping businesses contribute to the energy transformation

As a leading supplier of electricity and gas to UK businesses, we support the energy transformation in the UK. By making it easier for businesses to become smarter with their energy consumption and generation we can help guide them to a more sustainable energy future.



### Premium-free green energy

Buying 100% renewable electricity is a simple, cost effective way for our customers to reduce their carbon emissions. At Ørsted, we absorb the additional Renewable Energy Guarantee of Origin (REGO) premium associated with buying renewable electricity, allowing our customers to choose renewable electricity at no additional cost. Our premium-free green offer makes choosing electricity from a renewable source a commercially sound decision for businesses of all types and sizes. It allows them to contribute towards a more sustainable future without impacting their budget. It also helps our customers support their corporate social responsibility (CSR) strategies by making the ethical choice for their energy supply.



### Cost-effective

We offer our customers a range of innovative, smart tools to help them become more flexible with their energy consumption. Our flexibility products range from intelligent software giving our customers forward sight of electricity prices, to a fully managed service to establish the optimal run schedule for their plants. We give customers the tools to unlock the value of their assets without extra investment, commitment or risk.





## The Ørsted DNA

### Our community investment

Across the UK, we are supporting the communities where we work. We have created three independently-run Community Benefit Funds, supported by our wind farms in the North East and North West. We have ring fenced part of these funds to support local training and skills development. We also help encourage the study of science, technology, engineering and maths (STEM) in local schools through initiatives such as our three-year partnerships with the Natural History Museum and with educational charity Teach First.

### Why Ørsted?

We are named after Hans Christian Ørsted, one of Denmark's best known scientists and innovators. Through his curiosity, dedication and interest in nature, he discovered electromagnetism in 1820, helping to lay the scientific foundation for how power is generated today. These qualities of Hans Christian Ørsted are just what we need to revolutionise the way we provide power to people.

**Pictured left:** Working with the Natural History Museum, London, to help shape attitudes to science for the young people in our local community.

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